REMARKS

This Amendment is filed in response to the Office Action mailed on June 14,

2007. All objections and rejections are respectfully traversed.

Claims 1-49 are currently pending.

Claims 48-49 are currently added.

Request for Interview

The Applicant respectfully requests a telephonic interview with the Examiner

after the Examiner has had an opportunity to consider this Amendment, but before the

issuance of the next Office Action. The Applicant may be reached at 617-951-3067.

Claim Rejections – 35 USC § 101

At paragraphs 3-4 of the Office Action, claims 27-32 were rejected under 35

U.S.C. §101 as being directed to non-statutory subject matter. Specifically, the Examiner

stated that the claims were directed to computer software per se.

Applicant respectfully urges that representative claim 27 complies with all re-

quirements of MPEP 2106 IV (page 2100-10 of the Eighth Edition of the MPEP Incorpo-

rating Revision 2). In particular, Claim 27 is to a computer readable storage device, for

example a disk, etc. The disk contains the computer program, and the computer program

executes the novel steps set out in claim 27. Accordingly, Applicant respectfully urges

that claim 27 complies with all requirements of 35 U.S.C. § 101, and with the require-

ments of MPEP 2106 IV.

At paragraph 5 of the Office Action, claim 42-47 were rejected under 35 U.S.C.

§101 as being directed to non-statutory subject matter. Specifically, the Examiner states

the method claims do not produce a useful, tangible, or concrete result.

Applicant respectfully notes that representative claim 42 is applied to a cluster

storage system having a plurality of servers. The servers are hardware and the method is

applied thereon. After a failure mode is selected one or more of the servers of the cluster

is configured with the failure mode. For example, when the failure mode selected is part-

ner mode, then one or more ports on a partner server are configured with necessary ad-

dresses for clients to access the port. Accordingly, as the method is modifying hardware,

then claims 42-47 are allowable over the §101 rejection.

Claim Rejections – 35 USC § 102

At paragraphs 6-7 of the Office Action, claims 1-4, 6-36, and 38-47 were rejected

under 35 U.S.C. §102 as being anticipated by Blumenau et al., US Patent 6,421,711,

hereinafter Blumenau.

The present invention, as set forth in representative claim 1, comprises in part:

1. A system configured to simplify management of a clustered storage sys-
tem having a plurality of failover modes, the system comprising:
    a user interface system that defines a plurality of failover modes,
wherein each failover mode automatically configures one or more ports

on a selected storage system or a partner storage system in response to a failover condition; and
    a command set implemented by the user interface system and including a command for setting a cluster mode where the cluster mode includes at least one of the plurality of failover modes.

By way of background, Blumenau discloses a storage controller with at least one physical port and a plurality of virtual ports. A virtual switch routes storage requests from the physical port to the virtual ports. The storage controller includes a graphical user interface (GUI) that includes a grid of logical volumes to storage adapter ports. Additionally, at each intersection on the grid, the target/LUN s assigned to provide the administrator with a view of the mappings of LUNs to logical storage volumes and storage adapters. Furthermore, an administrator can use "mount" and "unmount" commands for mounting and unmounting storage volumes to storage ports.

Applicant respectfully urges that Blumenau does not disclose Applicant's claimed novel *a user interface system that defines a plurality of failover modes, wherein each failover mode automatically configures one or more ports on a selected storage system or a partner storage system in response to a failover condition* and *a command set implemented by the user interface system and including a command for setting a cluster mode where the cluster mode includes at least one of the plurality of failover modes.* In further detail, in Applicant's claimed invention, a user interface is used to simplify management of a clustered storage system. The user interface defines a plurality of failover modes for operating the cluster in cluster mode. The command set permits the administrator to set the cluster failover mode as STANDBY, PARTNER, DUAL_FABRIC or

MIXED. "In STANDBY mode, the storage appliances utilize standby ports and a conventional failover mechanism. In the PARTNER mode, the appliances utilize the partner ports for data access proxying. In the DUAL_FABRIC mode, which is typically set when the storage appliance has only one physical port, the storage appliance utilizes virtual ports to emulate additional active ports for clients. If the MIXED mode is set for the cluster, both the standby and partner ports are utilized." (Specification, page 6, lines 16-20). In contrast, Blumenau discloses a graphical user interface for organizing storage volumes and storage ports. Specifically, Blumenau includes a command line for mounting (or unmounting) volumes with a particular storage port. There is no disclosure in Blumenau of *a plurality of failure modes* or of a *command for setting a cluster mode where the cluster mode includes at least one of the plurality of failover modes*.

The Examiner states that Blumenau discloses "a command for setting a cluster mode, where the cluster mode defines the failover mode to be used," at col. 34, line 65 to col. 35, line 7, which states:

> "To respond to a failure condition, the storage subsystem could be programmed to respond to a report of a state change indicating that such a host has been disconnected from the data network by checking the volume access table or tables for any volume group names corresponding to the host, and if any such volume group name has been found, reporting the error to the system administrator. The system administrator can then decide whether any volumes allocated to the host should be deallocated and erased for use by other hosts."

In reference to the statement above, Blumenau states upon receiving a failure condition, the system administrator can then determine whether to allocate volumes to

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other hosts. Applicant's invention is configuring the system to automatically respond to a

failure condition using a selected failure mode from a plurality of failure modes available

to the cluster storage system.

Furthermore, the Examiner states that the multiple paths assigned to each sever in

Blumenau shows using a user interface to select a failure mode. The Examiner states this

is show at col. 29, lines 51-65, which states:

> "The system administrator could then select a logical storage vol-
> ume, or selected range of volumes, and select a LUN or range of LUNs as
> addressed by the host controller port, to establish the LUN to logical vol-
> ume mapping. For example, in FIG. 30, the GUI display has drawn a line
> 348 between the selected logical storage volume VOL1 and the selected
> LUN 2 to show that such a mapping has been established. The system ad-
> ministrator could also select an item on either list and "collapse" the list to
> go back up to the level in the outline above the selected item. For data se-
> curity, any unallocated logical volume should be re-formatted or erased of
> any pre-existing data before being allocated.
> The system administrator could select an item on either list and se-
> lect a "properties" option to display properties of the selected item. For
> example, the grid 345 of FIG. 29 could be one of the properties of the vir-
> tual port 1. The properties of a logical storage volume would include the
> host controller ports having access to the logical storage volume, and the
> paths or adapter ports and virtual port through which the host controller
> ports can access the logical storage volume." (emphasis added)

In reference to the statement above, Blumenau merely configures each volume

with multiple ports, either physical or virtual ports. The configuration is not used in re-

sponding a failure condition as in Applicant's claimed invention. There is no disclosure

of how Blumenau responds when all the ports fail on a host server, whereas, in Appli-

cant's claimed invention if standby mode is selected as the failure mode then the disks of

a primary server can be accessed through a standby server when the primary server fails.

In conclusion, there is no teaching Blumenau of a plurality of failure modes, as claimed in Applicant's invention. Blumenau merely allocates the ports using an interface and can set up redundant paths.

Accordingly, Applicant respectfully urges that Blumenau is legally insufficient to anticipate the present claims under 35 U.S.C. §102 because of the absence of the Applicant's claimed novel *a user interface system that defines a plurality of failover modes, wherein each failover mode automatically configures one or more ports on a selected storage system or a partner storage system in response to a failover condition* and *a command set implemented by the user interface system and including a command for setting a cluster mode where the cluster mode includes at least one of the plurality of failover modes*.

Claim Rejections – 35 USC § 103

At paragraphs 7-8 of the Office Action, claims 5, 23, and 37 were rejected under 35 U.S.C. §103 as being unpatentable over Blumenau, in view of Clark, "IP SANs: A Guide to iSCSI, iFCP, and FCIP Protocols for Storage Area Networks'" Published Nov. 26, 2001, hereinafter Clark.

Applicant respectfully notes that claims 5, 23, and 37 are dependent claims that depend from independent claims believed to be in condition for allowance. Accordingly, claims 5, 23, and 37 are believed to be in condition for allowance.

All independent claims are believed to be in condition for allowance.

All dependent claims are dependent from independent claims which are believed to be in condition for allowance. Accordingly, all dependent claims are believed to be in condition for allowance.

Favorable action is respectfully solicited.

Please charge any additional fee occasioned by this paper to our Deposit Account No. 03-1237.

Respectfully submitted,

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